

CORNELL UNIVERSITY  
OFFICIAL PUBLICATION

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*New York State Veterinary College*

1951-52

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# *Historical Sketch*

## THE FOUNDING OF THE COLLEGE

THE New York State Veterinary College was established by act of the State Legislature in 1894: "There is hereby established a State Veterinary College at Cornell University," Laws of New York, 1894, p. 307. By action of the Board of Trustees of Cornell University, June 10, 1894, the location of the College upon the University campus was authorized. It was further enacted that while the University does not undertake any financial responsibility for the buildings, equipment, or maintenance of the College, it does consent to furnish instruction upon such subjects as are or shall be in its curriculum, upon such terms as may be deemed equitable.

By further acts of the Legislature provision was made for the buildings, equipment, and maintenance of the College and finally, in 1897, by "An act to provide for the administration of the State Veterinary College, established by Chapter 153 of the laws of 1894," the Trustees of Cornell University were entrusted with its administration.

## OBJECTS OF THE INSTITUTION

As stated in the act to provide for the administration of the State Veterinary College: "The State Veterinary College, established by Chapter 153 of the laws of 1894, shall be known as the New York State Veterinary College. The object of said Veterinary College shall be: To conduct investigations as to the nature, prevention, and cure of all diseases of animals, including such as are communicable to man and such as cause epizootics among live stock; to investigate the economic questions which will contribute to the more profitable breeding, rearing, and utilization of animals; to produce reliable standard preparations of toxins, antitoxins, and other productions to be used in diagnosis, prevention, and cure of diseases, and in the conducting of sanitary work by approved modern methods; and to give instruction in the normal structure and function of the animal body, in the pathology, prevention, and treatment of animal diseases, and in all matters pertaining to sanitary science as applied to live stock and correlatively to the human family."

The New York State Veterinary College was founded to raise the standards of veterinary investigation and instruction to the level of the most recent advances in biology and medicine. The following table was taken from the B.A.I., U.S.D.A., report, "Livestock on Farms, Jan. 1, 1950":

CLASS OF LIVESTOCK	NUMBER (1,000 head)	FARM VALUE (thousand dollars)
<i>United States</i>		
All cattle and calves	80,277	9,873,710
Hogs, including pigs	60,424	1,638,964
All sheep and lambs	30,797	548,248
Horses and colts	5,310	242,879
Mules and mule colts	2,153	214,018
<i>New York</i>		
All cattle and calves	2,226	387,324
Hogs, including pigs	212	5,448
All sheep and lambs	178	3,378
Horses and colts	145	9,135
Mules and mule colts	2	150

The value of poultry in New York State is \$33,565,000. Another consideration is that the normal permanent fertilization of the soil is dependent upon the livestock kept, and that where there is a deficiency of animals, the productiveness of the land is steadily exhausted; therefore, the health and improvement of animals and the fostering of animal industry lie at the very foundation of our national wealth. Another and no less potent argument for the higher standard of veterinary education is its influence on the health of the human race. With a long list of communicable diseases which are common to man and beast, it is to the last degree important that measures for the extinction of such contagion in our livestock should receive the best attention of the most highly trained experts.

To justify the liberality of the State in creating this seat of learning, it is the aim of the College to train thoroughly a class of veterinarians for dealing with all diseases and defects that depreciate the value of our livestock, and with the causes that give rise to them. It further aims, as far as it has the means and opportunity, to maintain a center of investigation looking toward discoveries in the nature of diseases, in therapeutics, and in the immunization of animals from contagion; and toward the production of biological products to be employed in diagnosis, treatment, and immunization. So much has been discovered recently in these directions, and present knowledge points so unmistakably to coming discoveries, that to neglect this field at the present time would be very unfortunate. Furthermore, it is the purpose of the College to be of as much assistance as possible to the practitioners of veterinary medicine.

## *Situation and Buildings*

THE New York State Veterinary College is located at Ithaca, a city of approximately 22,000 population, exclusive of students, at the head of Cayuga Lake, 263 miles from New York City, on the Lehigh Valley and Lackawanna Railroads.

The College is housed in six principal buildings forming a quadrangle near the center of the campus of Cornell University. All of these buildings except the latest are of buff pressed brick; the main portion of the recently constructed Moore Laboratory is of native seam-faced limestone.

The main building (James Law Hall) is a three-story structure facing East Avenue across a small park. The first floor is largely occupied by the College Museum. Several offices, including that of the College Secretary where students should register, are also on this floor. The greater part of the second floor is occupied by research laboratories. A part of the second floor, the third floor, and the basement contain the laboratories of the Department of Physiology.

The north wing of this building consists of two stories and houses the laboratories and classrooms of the Department of Anatomy. The south wing contains the office of the Dean and the business offices on the first floor, and the College library on the second. In the rear of this wing is a large auditorium.

The Veranus A. Moore Laboratory of Pathology was completed and equipped in 1938. It is the most complete and best equipped structure of its kind in America. It is an L-shaped building of three stories and a basement. The basement contains the operating machinery for the refrigeration plant, the elevator and other services, a feed storage room, a cool room for storing paraffin tissue blocks, and a student locker and lounging room. The first floor contains two lecture rooms, two suites of rooms for the general and poultry diagnostic laboratories, respectively, offices and, in the rear, quarters for large experimental animals. The second floor is devoted to the offices and laboratories of pathology. Two undergraduate teaching laboratories, a teaching museum, preparation and slide storage rooms, a photographic unit, a seminar room, and a number of offices and individual research laboratories are found in the main portion of this floor. In the rear, opening on a terrace at the level of the clinic buildings is a large autopsy room, fitted with the most modern equipment, including a hydraulic table for large animals, smaller tables for small animals, a large refrigeration room,

and a small laboratory. The third floor is devoted to bacteriology. Two teaching laboratories, a chemical laboratory, a media kitchen and sterilizing unit connected by an electric dumb-waiter to the laboratories on the first and second floors, and a number of offices and individual research laboratories occupy the greater part of this floor. In the rear are quarters for small experimental animals.

The Small Animal, the Medical, and the Surgical Buildings form a group, commonly called the Clinical Buildings. They are three stories in height and face Garden Avenue overlooking Alumni Field.

The Small Animal Building contains a large, modern operating room, drug rooms, X-ray room, and kennels and cages for patients. There are a number of wards for animals with infectious diseases and skin diseases. The offices, laboratories, and examining rooms of the clinics are on the second floor, and the laboratories for therapeutics and pharmacy on the third.

The Medical Building contains, on the ground floor, a clinic hall, a drug room, a physical examination room for large animals, wards for patients, and a garage for the cars of the Ambulatory Clinic. The second floor contains a lecture room, a clinical and diagnostic laboratory, and offices, one of which is used by the Director of the State's Mastitis Program. The third floor contains the office of the Veterinary ROTC Unit, offices and laboratories for those engaged in mastitis research, a room for an interne, and the groom's apartment. A loft provides storage space. A freight elevator provides means of taking materials to the loft.

The Surgical Building contains, on the ground floor, two isolation wards for horses and cattle and a surgical practice hall. The second floor contains a completely equipped shop for the teaching of horse-shoeing. The third floor is used for classrooms and a museum.

The Surgical Ward is situated behind the Surgical Building. It is two stories high and is devoted almost entirely to stalls for large-animal, surgical patients. At the south end of this building is the Operating Pavilion, a large operating room equipped with stocks, a hydraulically controlled operating table, and the necessary sterilizing equipment and surgical instruments for aseptic surgery.

The Snyder Hill farm of the College is used for maintaining herds and flocks for experimental purposes. It consists of 133 acres, most of which is pasture land. Besides the many stables and small isolation units for animals, there are three larger, steam-heated, laboratory buildings. One of these is used for poultry disease investigations; the others are a part of a newly established virus disease research plant. The latter consists of a laboratory building, a building for raising rabbits, guinea pigs, and mice in isolation, and an isolation building for housing animals while under experimentation with highly infective viruses. Now under construction is another laboratory and isolation building for research on canine diseases, provided through the generosity of



many dog lovers, and a special building for breeding and raising dogs for experimental subjects. Residences for the farm foreman and the Director of the Virus Laboratories are located on the farm.

### LIBRARIES AND MUSEUMS

The Veterinary College not only has a good special library of its own, the Roswell P. Flower Library, but it also enjoys the free use of the University Library and other college libraries containing approximately 1,400,000 volumes and 10,000 current periodicals and transactions of societies. Its own museum, moreover, is supplemented by other University museums, among which, of particular value to the College, are those of vertebrate and invertebrate zoology (including entomology), agriculture, botany, and geology.

#### THE ROSWELL P. FLOWER LIBRARY

The College is fortunate in having the Flower Veterinary Library, containing over 20,000 volumes and approximately 325 current periodicals, second to no other special veterinary library in the country. This library is made up of two collections: one purchased with state funds, and the main collection purchased with the proceeds of a fund begun by Roswell P. Flower in 1897 with a gift of \$5,000 to the University for the Veterinary Library. Four thousand dollars of this gift was used immediately for the purchase of books, leaving \$1,000 as a source of income. This sum was increased in 1900 by \$10,000 given by Mrs. Flower, and in 1929 by about \$8,000 added largely through the efforts of Dr. Frank H. Miller, for many years a trustee of the University.

Besides texts in the fields covered by the curriculum and related subjects, the library carries over three hundred American and foreign periodicals and receives pertinent publications from all other important colleges and experiment stations. The University also deposits a number of special periodicals and handbooks in this library, which increases its serviceability.

The library is in the south wing of James Law Hall, with stacks and a spacious reading room that is open from 8:00 to 5:30 and three evenings a week. In the main reading room are the current numbers of periodicals — veterinary and medical — the catalogues, indexes, reference books, and texts bearing especially on class work; in an adjoining room are the stacks, which are open to the students.

Books may be drawn for home use as from the University and Agricultural libraries. These libraries and the Chemistry library are also accessible to Veterinary students and extend their opportunities in the fields of general and special literature. The library also borrows books or microfilms from several of the largest medical libraries, thus opening to research workers the main collections of medical literature in the country.

## *Admission and Entrance Requirements*

SINCE the fall of 1949 the minimum education requirements for admission to the New York State Veterinary College have been the satisfactory completion of two years' study in an approved college or university. The two years of college study must include:

English — 6 semester hours

Physics — 6 semester hours, including laboratory

Biology or Zoology — 6 semester hours, including laboratory

Chemistry — 12 semester hours, including laboratory.

The courses in English, physics, and biology or zoology should cover at least one academic year each. The work in chemistry should cover at least one and a half academic years and must include a course in organic chemistry with laboratory work. A course in zoology is preferred to a course in biology.

An applicant is urged not to take courses identical to, or substantially identical to, those in the Veterinary curriculum.

An applicant for admission is expected to have facility in the use of the English language in speech and composition. Therefore a course in oral and written composition, or in speech, is strongly recommended.

The choice of other courses is left to the student, but the following are recommended: quantitative chemical analysis, a modern foreign language, history, economics, government, botany, mathematics, biometry, philosophy, psychology, comparative anatomy, general physiology. It is suggested that not more than 30 semester hours of the minimum requirement be devoted to chemistry, biology or zoology, and physics.

*Two years of study* has been interpreted as meaning the passing of one half as many semester credit units as are required by the particular institution for its baccalaureate degrees. Most institutions, which are run on a semester basis, require 120 units, but some require 124, and some even 128. At least 60 semester units must be presented, therefore, and in some instances 62 or more.

A *registered college* is one which is registered with, and its curriculum is approved by, the New York State Education Department. All colleges within New York State which are authorized to grant baccalaureate degrees are registered and approved. This is not true, however, of all such institutions outside of New York State. In general, practically all



of the larger colleges and universities are registered. If in doubt as to whether any particular school is registered, one should address correspondence to the State Education Department, Albany, N. Y., and not to this College.

The *Farm Practice Requirement* formerly could be met during summer vacations after admission to the College. This requirement has been increased, and at least one half of the experience must now be obtained prior to admission. A total of 20 farm practice points is required, of which at least 10 must be for experience with livestock. A minimum of 10 points, including not less than 5 for livestock, must be presented to qualify for admission. By livestock, farm animals are meant. Dogs and cats are not included, and not more than 3 points may be claimed for experience with poultry.

Farm practice points are awarded on the basis of tests administered by the Department of Farm Practice, New York State College of Agriculture, Ithaca, N.Y. Except for students who have previously enrolled in the College of Agriculture and whose farm practice scores are available to it, the Committee on Admissions of the Veterinary College will estimate the experience of all candidates. All who are admitted without farm practice ratings in the Department of Farm Practice will be required to take the tests after admission and all who are found to be deficient will be required to make up their deficiencies during the first two summer vacations while they are in college.

Applicants who have been reared on farms where livestock are kept should easily meet all requirements. Those who are not farm-reared will have to spend at least three months as full-time farm workers with some responsibility for farm animals to qualify for admission. The full requirements can hardly be met by less than six months of such experience. Little credit will be allowed for experience obtained before the age of 14 years.

This requirement is applicable only to men students; nevertheless women applicants will improve their chances of acceptance by acquiring as much experience with farm animals and farm life as they can get.

Whenever possible, prospective applicants are urged to obtain the full experience required before submitting their applications. In a highly competitive situation, those who have the full requirements will have an advantage over those who have only the minimum.

The applicant should write as early as possible to the Director of Admissions of Cornell University, Ithaca, N.Y., requesting the application forms for admission to the Veterinary College. The Director of Admissions will require a transcript of the applicant's college record, and high school regents marks if a New York State high school was attended.

The number of students that can be admitted annually is limited. It is likely that the number of applicants who can meet the scholastic

requirements will exceed the number that can be accepted. In this case a Committee on Admissions of the Faculty of the Veterinary College will select those to be admitted after considering not only the formal preparation but also the available evidence bearing on each applicant's character, seriousness of purpose, and fitness for the work that he proposes to undertake. This committee will require a personal interview, whenever this is feasible.

Priority of application is not necessarily a determining factor in the selection of students to be admitted; nevertheless, the gathering and weighing of the necessary evidence require time, and, as the committee will begin filling the eligible list early in the year, it is advantageous to the candidate to file his application early. March 1 is the latest date for filing applications. Students who have not completed the work required for admission but expect to do so prior to July 1 may apply, and the committee will act on the application provisionally.

### RULES COVERING ADMISSION

Applicants for admission must not only satisfy the entrance requirements but must also comply with certain rules of the University, as follows:

1. Every candidate for admission to an undergraduate course of study must file with his application at the Office of Admissions either a certificate of good moral character or, if he has attended some other college or university without graduating from it, a certificate of honorable dismissal from it.

2. Every candidate for admission who receives notice of approval of his application must deposit \$25 with the Treasurer. Candidates are warned not to send cash through the mails. A check, draft, or money order should be payable to *Cornell University* and should be sent to the Office of Admissions, Cornell University, Ithaca, N.Y.

If the candidate matriculates, the deposit will be credited to his account: \$10 for the matriculation fee, \$1 for an examination book fee, and \$14 as a guaranty fund, which every undergraduate student is required to maintain, and which is to be refunded upon his graduation or permanent withdrawal, less any indebtedness to the University.

A candidate may withdraw the application for admission, but a charge of \$10 is regularly made for accrued expenses unless the application is withdrawn and a refund of the deposit in full is claimed before the due date. If an application is not withdrawn until after the due date but is withdrawn before August 31, the \$10 charged for accrued expenses is deducted and \$15 of the deposit is refunded. No refund is made to an applicant who withdraws the application after August 31.

3. Every student matriculating in the University is required to present to the Director of Admissions a satisfactory certificate of vaccination against smallpox; this certificate is to be considered satisfactory only if it certifies to a successful vaccination within five years before

the date of entrance or certifies that at least three unsuccessful attempts at vaccination have been made within the same period. The certificate should reach the *Director of Admissions* not later than August 1.

#### ADMISSION TO ADVANCED STANDING

Applicants for admission to advanced standing as members of the second, third, or fourth-year class must present the necessary educational qualifications for admission to the first-year class and must pass satisfactory examinations in all the work for which they desire advanced credit, or offer satisfactory certificates of the completion of this work in other schools whose entrance requirements and courses of study are equivalent to those of this College. No person will be admitted to any advanced class except at the beginning of the college year in September.

#### ADMISSION TO THE GRADUATE SCHOOL

Graduates of this College or other colleges may enter the Graduate School of Cornell University and pursue work in the Veterinary College and allied departments of the University. A prospective graduate student should consult the *Announcement of the Graduate School* and apply to the Dean of the Graduate School.

The Veterinary College, alone or in combination with other departments of the University, offers advanced students excellent opportunities for study and investigation. Its situation gives it abundant and varied material for research, and it has ample facilities for the prosecution of such work. It encourages graduate and advanced students to carry on independent investigations. Courses of study especially adapted to advanced work and research will be found among those listed on pages 26-36.

#### SEMINARS

The several departments of the College hold seminars or special conferences for their advanced and graduate students. The seminar hears reports of the results of investigations and the progress of knowledge in its particular field; discusses methods of advanced and independent work such as are expected of those who are preparing theses or prosecuting any special investigation; and hears the reports of the students on the progress of their work. By means of the seminar the student incidentally gains facility in public speaking and fits himself to take a creditable part in the meetings of veterinary or medical societies.

#### STUDY FOR PRACTITIONERS

The very rapid advances made during recent years in veterinary science and in facilities and methods for teaching it, as well as the advantages to be gained by studying a given subject under more than one teacher, make it highly desirable that busy practitioners should be enabled as far as possible to increase their personal knowledge by means of study at such times as they can leave their practices. The New

York State Veterinary College wishes to satisfy this want as far as practicable and offers every facility at hand to accomplish this end.

Veterinarians who are legally authorized to practice at their places of residence will be admitted to any class in the College at any time and for such period as they may elect without entrance examinations.

They will be wholly free to elect any studies that are being regularly taught at the time and will be granted all opportunities and facilities offered to regular students so long as these privileges do not interfere with the instruction of the regular students. No tuition will be required for licensed veterinarians practicing in the State of New York. Those taking laboratory courses will be required to pay fees to cover the cost of the materials used. Every practicable facility will be offered for special study along desired lines. An inspection of pages 26-36 will enable a practitioner to determine in advance precisely what work will be in progress at a given date.

This work is offered to veterinarians entirely for the benefit they may derive from increased knowledge in veterinary science and does not contemplate the granting of a degree, certificate, or other evidence of responsibility on the part of the College.

General inquiries in reference to this work should be addressed to the Dean, whereas questions relating to studies in the various departments may be addressed to the heads of the departments concerned.

### COMBINED COURSES

Students who do their preveterinary work either in the College of Agriculture or the College of Arts and Sciences of Cornell, may, by judicious early planning, be able to qualify for both B.S. (or A.B.) and D.V.M. degrees in less time than would be required if the courses were taken consecutively. This can be done by double registration during the latter part of the period whereby certain course credits in the veterinary curriculum can be applied toward completing the requirements for the Bachelor's degree.

Three years are ordinarily spent as a candidate for the baccalaureate degree before the application for veterinary medicine is filed. It should be clearly understood that no assurance can be given in the beginning that candidates will be permitted to complete this plan, since decision on admission to the veterinary course cannot be given until the admission requirements of the Veterinary College have been completed.

### REGISTRATION

Every student is required to register with the Registrar of the University at the beginning of each term (see the calendar of the University for the day of registration). After completing that registration, he must register on the same day with the Secretary of the Veterinary College. After being admitted to the University no student is allowed to register

after the close of the regular registration day except by special permission.

### FOREIGN STUDENTS

A member of the University staff, Donald C. Kerr, Counselor to Foreign Students, looks after the welfare of students coming from outside the United States. These students are invited to apply to him for any information they need and to consult him about personal problems, social questions, or difficulties of any kind. His office is in the Administration Building. It is suggested that foreign students write to him before they come to Ithaca or call on him when they arrive here. He will be glad to meet them at the train, help them find suitable living quarters, either at the Cosmopolitan House or elsewhere, and assist them with introductions. The Cornell Cosmopolitan House, 301 Bryant Ave., has living and dining accommodations for a group of foreign and American students.

## *Tuition and Other Fees*

*Tuition.* For students not residents of the State of New York the tuition in the Veterinary College is \$150 a term, payable at the beginning of each term as printed on the registration coupons. Tuition is free to residents of the State of New York. The law governing administration of the College provides that "no tuition fee shall be required of a student pursuing the regular veterinary course who for a year or more immediately preceding his admission to said veterinary college shall have been a resident of this State." A limited number of tuition scholarships are available to nonresidents; see *Tuition Scholarships*, page 19.

*The College and University General Fee.* For certain services or privileges the University charges students a College and University General Fee of \$66.50 each term over and beyond tuition. This general fee is paid by all students in the divisions at Ithaca, the amount varying in the different schools and colleges. It contributes toward the services supplied by the Libraries, the Clinic and Infirmary, and the Student Union in Willard Straight Hall, pays a portion of the extra costs of laboratory courses and general administration, and supports programs of physical recreation and student activities.

A *Graduation Fee* of \$10 is required, at least ten days before the degree is to be conferred, of every candidate for a degree.

Tuition and other fees become due when the student registers. The University allows twenty days of grace after the last registration day of each term. The last day of grace is generally printed on the registra-

tion coupon which the student is required to present at the Treasurer's office. Any student who fails to pay his tuition charges, other fees, or other indebtedness to the University, or who, if entitled to free tuition, fails to claim it at the Treasurer's office and to pay his other fees and indebtedness, within the prescribed period of grace, is dropped from the University unless the Treasurer has granted him an extension of time to complete payment. For such extension the student is assessed a fee of \$2. A fee of \$5 is charged for late payment where no extension has been granted. For further information, consult the *General Information* booklet (obtained by writing to Cornell University Official Publication, Administration Building, Ithaca, N.Y.).

A tuition fee or other fee may be changed by the Trustees at any time without previous notice.

### CHARGES FOR MINOR DELINQUENCIES

Every student is held personally responsible for any injury done by him to any of the University's property.

Assessments, charged to the student's account and payable at the Treasurer's office, are levied upon the student in certain circumstances, under the following rules of the University:

A matriculated student desiring to register after the close of registration day shall first pay a fee of \$5. Students in the Graduate School are excepted.

A student desiring to file his registration of studies after the date set by his college for filing the same shall first pay a fee of \$2.

A student desiring to take an examination or other test for the removal of a term condition (including the making up of a mark of "absent" or "incomplete") shall first pay a fee of \$2 for each examination or other test.

A student desiring to make an appointment for the required medical examination or conference after twenty days from the last registration day of the term shall pay a fee of \$2.

For reasons satisfactory to the proper authority any of the above mentioned assessments (except that levied for examination or other test to remove a condition) may be waived in any individual case if the student's failure to comply with the regulation was due to ill health or to other reasons beyond his control. Application for such a waiver should be made to the dean of the college enrolling the student, or, in the case of the medical examination, to the chairman of the Faculty Committee on Health.



## Scholarships

*University Scholarship for Graduates.* One University Graduate Scholarship of the value of \$200 is offered annually to a graduate in veterinary medicine. This scholarship is open to graduates of all veterinary schools having requirements for graduation equivalent to those of this College. Applications may be made by graduates or seniors in good standing and should be filed with the Dean of the Graduate School on or before March 15 of the academic year preceding the one for which application is made.

*Tuition Scholarships.* The trustees have authorized a limited number of scholarships, each of an annual value of \$300, the amount of the annual tuition, to be awarded each year by the Veterinary College. The scholarships are awarded to undergraduate students who are of sufficiently high promise or standing in the judgment of the Faculty, who are not residents of New York State, and who have had, before entering, two or more years of college or university training. Each student holding a scholarship must maintain a standing satisfactory to the Veterinary Faculty.

(In recent years the number of New York State applicants has been much greater than can be accommodated. For this reason the number of out-of-state students admitted has been limited, and tuition scholarships are rarely awarded. Only those who have extraordinary qualifications and a real need of financial assistance are likely to be considered seriously for these scholarships.)

*Valentine Mott Knapp Scholarship.* This annual scholarship of the value of \$400 was established through the will of David V. Knapp as a memorial to his brother, Dr. Valentine Mott Knapp, '04. By action of the Faculty, the award is to be made each year to a qualified applicant at the completion of his third year's work. Students who wish to be considered for this scholarship should make application for it to the Dean not later than May 1. In awarding the scholarship, the Faculty will take into consideration the following points: ability of the applicant to do creditable academic work, personal characteristics of the applicant with respect to professional attitude, and financial need.

## *Student Loan Funds*

The Cornell Veterinary Alumni Association, the New York State Veterinary Medical Society, and the family of David E. Wright, '12, have donated funds to the University from which loans to veterinary students can be made. Veterinary students also are eligible to apply for loans from other funds held by the University. All of these are administered through the offices of the Deans of Students. These funds are for emergency use only. Students who are in real need should not hesitate to apply to them for assistance. It is suggested that students discuss their needs with the Dean of the College before applying.

## *Prizes*

Cornell University has been given a considerable number of funds for the endowment of prizes to be awarded annually. Some of these prizes are open to competition by students of the University generally. The University publishes a list of them under the title *Prize Competitions*, a copy of which will be mailed on request addressed to Cornell University Official Publication, Administration Building, Ithaca, N.Y. Prizes open to competition only by students of the Veterinary College are as follows:

*The Borden Veterinary Scholarship Award* was established by the Borden Company Foundation, Inc., in 1945. It consists of an annual award of \$300 to be made to the member of the fourth year class in Veterinary Medicine who attained the highest scholastic record in all veterinary studies prior to the final year. The award will be paid to the recipient during the fall term of the final year. In the event that the Dean finds it inappropriate to make the award in any one year, the award may be deferred, but only one award shall be made in any succeeding year.

*The Horace K. White Prizes*, established by Horace K. White of Syracuse, are awarded annually to meritorious students in the graduating class of the College. They consist of a prize of \$75 to the first in merit and a prize of \$25 to the second in merit.

*The Jane Miller Prize* of \$40 in physiology is awarded to the student or students doing the best work in this subject. This prize is usually



divided into a first prize of \$25 and a second prize of \$15 and is awarded at the end of the third year.

*The James Gordon Bennett Prize* of \$40 is offered to members of the graduating class. The award is based upon the work in the clinics giving evidence of the ability of the recipient to handle diseased animals humanely. Special emphasis is laid upon the ability of the student to apply effectively local and general anesthesia.

*The Anne Besse Prize* of \$40 is awarded in the principles and practice of veterinary medicine. This award is based upon the work in the clinics giving evidence of ability in clinical diagnosis.

*The Charles Gross Bondy Prizes.* Two annual prizes are awarded to the two fourth year students who rank highest in proficiency in the courses of practical medicine and surgery of small animals. The first prize is \$25, and the second prize is \$15.

*The Mary Louise Moore Prize in Bacteriology.* This prize was established by a bequest of Dr. Veranus A. Moore in honor of his wife. Dr. Moore was a member of the original Faculty of the Veterinary College. He was Professor of Pathology, Bacteriology, and Meat Inspection from 1896 to 1926, and Dean of the Veterinary College from 1907 to 1920.

The proceeds of the endowment (\$40) may be awarded each year, upon recommendation of the Head of the Department of Pathology and Bacteriology and with the approval of the Dean of the College, either as a prize to students who have done the best work in the Department or as a subsidy to encourage individual research work of students by defraying expenses of their experiments.

*The Poultry Disease Prize.* This prize was established by Dr. Nathan Wernicoff, '31, and Dr. Tevis Goldhaft, '35, of Vineland, N. J., for the purpose of stimulating interest in diseases of poultry. The prize consists of \$50 for the best composition or essay, or the best original work reported, by a member of the fourth year class. Competing papers must be submitted not later than the first week of the second term of the college year to the Dean, who will appoint a suitable committee to read them and make recommendations on the award. The award will not be made if, in the judgment of the committee, none of the papers submitted are considered to be sufficiently meritorious.

*The Alpha Psi Prize.* This prize is given by Beta (Cornell) Chapter of the Alpha Psi Fraternity. It was suggested by the donors that this prize be "awarded by the faculty to a member of the fourth-year class who has shown by his scholarship, personality, character, and breadth of interest that he is capable of elevating the prestige and expanding the services of veterinary science in practice, in education, and in its relationship to community, state, and national welfare."

*New York Veterinary Medical Society Prizes.* These annual prizes, established by the New York State Veterinary Medical Society, consist

of three cash awards of the value of \$25, \$15, and \$10, respectively. They are awarded to members of the fourth year class who present and have approved the best case reports for publication in the organ of the Society, *Veterinary News*. The award year extends from May 1 to April 30. All case reports to be considered must be received at the Dean's office by the latter date. Each case report must be reviewed and approved for publication by the Head of the Department in which the case was received, studied, and treated, or by a person in the department designated by him. After the case report is approved for publication, two typewritten copies must be presented to the Dean's office. One copy will be sent to the editor of *Veterinary News*; the other will be placed on file. Case reports published jointly by several authors are acceptable. No limit is placed on the number of case reports presented by a student.

*Women's Auxiliary A.V.M.A. Prize.* This prize of \$25 is awarded annually to a senior student for a special contribution which advances the standing of the Veterinary College on the campus.

## *Health Services and Medical Care*

These services are centered in the University Clinic or out-patient department and in the Cornell Infirmary or hospital. Students are entitled to unlimited visits at the Clinic; laboratory and X-ray examinations indicated for diagnosis and treatment; hospitalization in the Infirmary with medical care for a maximum of 14 days each term and emergency surgical care. The cost for these services is included in the College and University general fee. For further details, including charges for special services, see the *General Information* booklet.

## *Expenses*

Living costs cannot be stated with the same degree of certainty as regular University charges, since they depend to a great extent upon the individual's standard of living. Recent estimates indicate that men students spend between \$250 and \$350 a term for room and board. Laundry, done in Ithaca, may require \$30 to \$60 a term. Books, instruments, and other supplies will cost between \$25 and \$60 a term. Additional allowance must be made for clothing, travel, and incidentals.

## *The Conduct of Students*

The University's rule governing the conduct of students is this: "A student is expected to show both within and without the University unfailing respect for order, morality, personal honor, and the rights of others." The authority to administer this rule and to impose penalties for its violation is vested in the University Committee on Student Conduct. The rule is construed as applicable at all times, in all places, to all students of the University. A student may at any time be removed from the University if, in the opinion of the Committee on Student Conduct, his presence is not conducive to the University's best interests.

# Prescribed Four-Year Course

LEADING TO THE DEGREE OF DOCTOR OF VETERINARY MEDICINE (D.V.M.)

## REQUIREMENTS FOR GRADUATION

In order to receive the degree of Doctor of Veterinary Medicine (D.V.M.), candidates must satisfy all the entrance requirements (see page 12), must successfully pursue the course named in the following curriculum, must have paid all fees due, and must have spent at least one year in residence.

The work of the College is arranged to begin late in September and to close in June. The academic year is divided into two terms.

At the conclusion of each term the Veterinary Faculty will review the records and conduct of students. Unsatisfactory students will be dropped from the College.

## THE CURRICULUM

In the following summary of the curriculum, the figure in the first column after the name of the course is the number of the course and refers to a description of one of the pages following (26-36); the figures in the second and third columns indicate the hours of credit given for the successful pursuit of the several courses in either term. The abbreviation "Req." indicates that a course, or its equivalent, is required for graduation but that no formal credit is given for the course.

### FIRST YEAR

	Course number	Credit	
		Fall term	Spring term
Anatomy .....	1	7	—
Anatomy .....	2	—	7
Histology and Embryology .....	305	4	—
Histology and Embryology .....	306	—	4
Animal Husbandry .....	1	3	—
Physiological Chemistry .....	11	6	—
Physiology .....	12	—	3
Animal Genetics .....	124	—	3
Botany .....	3	—	1
Animal Husbandry .....	50v	—	1
Total .....		20	19

## SECOND YEAR

	Course number	Credit	
		Fall term	Spring term
Physiology .....	13	3	—
Experimental Physiology .....	14	3	—
Bacteriology and Immunology .....	43	4	—
Bacteriology and Immunology Laboratory .....	43a	5	—
General Pathology .....	40	2	—
General Pathology Laboratory .....	40a	2	—
Special Pathology .....	41	—	2
Special Pathology Laboratory .....	41a	—	3
Therapeutics and Pharmacy .....	20	—	6
Parasitology .....	62	—	3
Parasitology Laboratory .....	62a	—	1
Animal Husbandry .....	10v	—	4
Total .....		19	19

## THIRD YEAR

Food Quality Control .....	48	6	—
General Surgery .....	30	4	—
Surgical Exercises .....	31	1	—
Infectious Diseases .....	42	3	—
Diseases of Large Animals .....	50	5	3
Diseases of Small Animals .....	21	3	—
Applied Anatomy .....	3	1	—
Applied Anatomy .....	4	—	1
Surgical Exercises .....	23	—	1
Obstetrics .....	51	—	5
Special Surgery .....	32	—	5
Diseases of Poultry .....	46	—	3
Röntgenology .....	27	—	1
Applied Parasitology .....	63	—	1
Clinical Orientation .....	201	Req.	Req.
Total .....		23	20

## FOURTH YEAR

Diseases of Large Animals .....	52	2	4
Diseases of Small Animals .....	22	3	—
Jurisprudence, Ethics, and Business Methods. ....	33	—	1
Clinical Conferences .....	202	Req.	Req.
*Clinics .....	203	Req.	Req.

\*Clinics will be held all day, Monday through Friday, beginning at 9 a.m.; on Saturday until 1 p.m.

# Courses of Instruction

In the following pages a list of the teaching departments of the College is given. Under each department heading, brief descriptions of the courses offered will be found. Most of these courses are a part of the veterinary curriculum; a few are elective to veterinary students or are given primarily for graduate students or students of other colleges of the University.

The clinics are operated by several departments. A brief statement about the particular clinical work of each department concerned will be found in the general description of the activities of that department. A general statement of the operation of the clinics, with courses and numbers, is given under a special heading following the departmental descriptions.

Finally, there is a listing of courses given by other colleges as a part of the veterinary curriculum.

## COURSES OFFERED BY THE VETERINARY COLLEGE

### ANATOMY

Professor M. E. MILLER; *Associate Professor* R. E. HABEL; *Assistant Professor* H. E. EVANS; *Instructor* G. C. CHRISTENSEN.

1. *ANATOMY*. First year, fall term. Credit seven hours. Lecture, F 9. Laboratory, M 10-12:30; T 9-12; W 9-11; Th 10-12:30; F 10-12; S 9-12:30. Laboratory fee, \$12. Professor MILLER, Associate Professor HABEL, Assistant Professor EVANS, and Instructor CHRISTENSEN.

Anatomy is the foundation upon which physiology, pathology, and clinical medicine are built. Anatomy 1 is intended to provide instruction leading to a general conception of the structure of a typical mammal. During laboratory periods, specimens are dissected. The lectures deal with recent advances in anatomy and the correlation of the region or system currently dissected with the plan of construction of the body as a whole. The dog is used as the basic dissector animal, with two students for each specimen.

No formal laboratory time is spent on osteology. Each student is provided with a disarticulated dog's skeleton which he may take to his residence, and he is expected to know the parts of the skeleton when the soft parts related to them are dissected. A deposit of \$15 is assessed each student for the skeletal material.

2. *ANATOMY*. First year, spring term. Credit seven hours. Lecture, M 9. Laboratory, M 10-1; T 10-1, 2-4:30; Th 10-1; F 2-4:30; S 10-12:30. Laboratory fee, \$10. Professor MILLER, Associate Professor HABEL, Assistant Professor EVANS, and Instructor CHRISTENSEN.

This course is devoted to the study of the cow, horse, and chicken. Since the body plan of all mammals is similar, only those parts of the cow and horse which differ from the dog or are of special surgical, diagnostic, or morphological interest are studied. The lectures are comparative in nature, the salient differences of the various organs and tissues among the veterinary species being elucidated.

3. *APPLIED ANATOMY*. Third year, fall term. Credit one hour. Laboratory, Th 10-12:30 or S 10-12:30. Laboratory fee, \$5. Associate Professor HABEL and Instructor CHRISTENSEN.

Anatomy 3 is designed to afford an opportunity for practice in the recognition of those anatomical features which are essential to diagnostic, surgical, obstetrical, and post-mortem procedures. The approach is topographical, comparative, and clinical. The emphasis is upon the study of living animals, supplemented by dissections, serial transections, models, and radiographs.

4. *APPLIED ANATOMY*. Third year, spring term. Credit one hour. Laboratory, W 2-4:30 or F 2-4:30. Laboratory fee, \$5. Associate Professor HABEL and Instructor CHRISTENSEN.

Anatomy 4 is a continuation of Anatomy 3.

6. *ADVANCED ANATOMY*. Fall and spring terms. Prerequisites, courses 1, 2, 3, and 4 or Comparative Anatomy 211 and 212 or their equivalent. Professor MILLER, Associate Professor HABEL, and Assistant Professor EVANS. Hours to be arranged. Preregistration not required.

This course is designed to give students the opportunity to carry on advanced work in veterinary anatomy.

9. *ANATOMY OF FARM ANIMALS*. Every second fall term, credit 2 hours. T 10-12:30, Th 10-12:30. Laboratory fee, \$15. Professor MILLER and Associate Professor HABEL. Offered 1951-52.

Designed primarily for graduate students in the School of Agriculture; the course is, however, open to a limited number of advanced undergraduate students in animal husbandry. Permission to register is required of all other students, regardless of college or scholastic status.

Prosections, lectures, models, illustrations, live animals, dissector animals, and radiographs will be used to teach morphology of the cow, sheep, pig, horse, and dog. Greatest emphasis will be placed on the cow. Students will use the dog as the basic dissector animal with dissection demonstrations on the horse during the first five weeks. The last ten weeks will be spent dissecting the various regions and systems of the ruminants.

## PHYSIOLOGY

*Professors H. H. DUKES, J. A. DYE, R. W. DOUGHERTY; Associate Professor CAROLYN F. SPRAGUE; Assistants J. J. O'TOOLE, JOSEPH TONZETICH, R. E. HUNGATE.*

Three main fields of activity are covered in the work of the department: animal physiology, human physiology, and physiological chemistry. In addition, some work in pharmacodynamics is given. The department is well equipped for teaching and research in its principal fields.

10. *ANIMAL PHYSIOLOGY*. Spring term. Credit three hours. M W F 10. Professor DOUGHERTY.

A course of lectures and demonstrations arranged especially for students of agriculture but open to others. Students taking this course should be familiar with the first principles of chemistry.

11. *PHYSIOLOGICAL CHEMISTRY*. First year, fall term. Credit six hours. Lectures and recitations, M 9; T 8; Th 9. Laboratory, M T Th 2-4:30. Laboratory fee, \$12; deposit, \$5. Associate Professor SPRAGUE and assistants.

A course in physiological chemistry, including the elements of biophysical chemistry. A part of the course will be devoted to a study of the normal chemical constituents of the blood and urine and the quantitative determination of such as have been found most important in physiological and clinical studies.

12. *PHYSIOLOGY*. First year, spring term. Credit three hours. M W F 8. Professor DUKES.

Lectures and demonstrations on blood and lymph, circulation, respiration, digestion, and absorption. The action of drugs (pharmacodynamics) will be considered where possible.



13. *PHYSIOLOGY*. Second year, fall term. Credit three hours. M T W 9. Professors DUKES, DYE, and DOUGHERTY.

Lectures and demonstrations on the muscular and nervous systems, senses, excretion, metabolism, heat regulation, endocrine organs, and reproduction. The action of drugs will receive attention where possible.

14. *EXPERIMENTAL PHYSIOLOGY*. Second year, fall term. Credit three hours. For nonveterinary students registration is by permission. Laboratory, M 10-12:30, F 8-1; or W 10-12:30, S 8-1. Laboratory fee, \$18. Professors DUKES and DOUGHERTY and assistants.

Special emphasis is placed on mammalian physiology. A part of the course is devoted to pharmacodynamics.

16. *ADVANCED EXPERIMENTAL PHYSIOLOGY*. Spring term. Credit three hours. Prerequisites, Physiology 12 or 13, or its equivalent, and Physiology 14, or its equivalent. Registration by permission. Laboratory, F 9-1. A conference hour to be arranged. Laboratory fee, \$10. Professors DUKES, DYE, and DOUGHERTY.

17. *SPECIAL PROBLEMS IN CHEMICAL PHYSIOLOGY*. Both terms. Hours and credit to be arranged. Registration by permission. Laboratory fee, \$2 a credit hour.

This course will be adapted to the needs of students and will consist of laboratory work, conferences, collateral readings, and reports.

18. *RESEARCH*. Both terms. Hours to be arranged. For graduates only. Professors DYE, DUKES, DOUGHERTY, and SPRAGUE.

303. *HUMAN PHYSIOLOGY*. Either term. Credit three hours. Prerequisite, a previous course, either in high school or college, in Biology and in Chemistry. Open to students in the Colleges of Arts and Sciences, Home Economics, Agriculture, and others. M W F 10. Professor DYE.

This is an introductory course designed particularly to present fundamentals and practical information concerning the physiological processes and systems of the human body. Lectures, illustrations, and demonstrations.

305. *ENDOCRINOLOGY AND METABOLISM*. Fall term. Credit three hours. Prerequisites, six or more hours of Biology, and a previous or parallel course in Organic Chemistry. Open to upperclassmen and graduate students. M W F 8. Professor DYE.

A study of excretion, metabolism, endocrinology, and reproduction. Illustrated lectures.

#### PATHOLOGY AND BACTERIOLOGY

Professors PETER OLAFSON, W. A. HAGAN, H. L. GILMAN, P. P. LEVINE, D. W. BAKER, J. A. BAKER, D. W. BRUNER; Associate Professors E. N. MOORE, J. H. WHITLOCK, C. G. RICKARD, K. McENTEE; Assistant Professors J. H. GILLESPIE, J. FABRICANT, J. BENTINCK-SMITH, M. C. PECKHAM; Laboratory Director G. C. POPPENSIEK; Research Associate C. J. YORK; Assistants L. Z. SAUNDERS, T. BURNSTEIN, A. V. MACHADO, K. M. LEE.

The laboratories of the department are well equipped with modern apparatus providing opportunity for advanced work, for those students who are properly prepared, in pathological anatomy, autopsy work, pathogenic bacteriology, immunity, virology, and parasitology. The department operates two diagnostic laboratories, one for poultry diseases and the other for general diagnostic work, to which a great deal of pathological material and many blood samples for serological testing come from all parts of the State. These laboratories furnish an abundance of fresh materials for teaching work and for research in animal diseases. The clinics and the routine autopsies also furnish material.

The following courses are required in the curriculum of the Veterinary College and are given particularly for veterinary students. When there is room for them, properly



prepared students of other colleges will be admitted, but permission to register must be obtained in each case.

40. *GENERAL PATHOLOGY LECTURES*. Second year, fall term. Credit two hours. Prerequisite, Zoology 305 and 306 (Histology and Embryology) or equivalent. In addition it is desirable that the student shall have had at least one year's work in anatomy and physiology. In special cases of students who are majoring in biology and expect to take no further work in pathology, these prerequisites may be waived in part. When this is done, the course will not be accepted as a prerequisite for other courses. T 10, Th 9. Professor OLAFSON.

40a. *GENERAL PATHOLOGY LABORATORY*. Second year, fall term. Credit two hours. Course 40 must be taken simultaneously or have been completed previously. Section I, W S 10-12:30. Section II, M F 10-12:30. Laboratory fee, \$5. Assistant Professor BENTINCK-SMITH.

41. *SPECIAL PATHOLOGY LECTURES*. Second year, spring term. Credit two hours. T 8, S 9. Prerequisite, course 40a. Professor OLAFSON.

41a. *SPECIAL PATHOLOGY LABORATORY*. Second year, spring term. Credit three hours. Course 41 must be taken simultaneously or have been completed previously. Work in hematology is included. Section I, M 10-1; T 2-4:30; F 10-1. Section II, M 2-4:30; W 10-1; S 10-1. Laboratory fee, \$8. Assistant Professor BENTINCK-SMITH.

42. *INFECTIOUS DISEASES*. Third year, fall term. Credit three hours. M W F 10. Prerequisites, Courses 41 and 43. Professor HAGAN.

43. *BACTERIOLOGY AND IMMUNOLOGY*. Second year, fall term. Credit four hours. The course includes general and pathogenic bacteriology and immunology. M T W Th 1:30. Professors BRUNER and J. A. BAKER.

43a. *BACTERIOLOGY AND IMMUNOLOGY LABORATORY*. Second year, fall term. Credit five hours. Open to students who have taken or are taking course 43 or its equivalent. M T W Th F 2:30-5. Laboratory fee, \$20. Professors BRUNER, J. A. BAKER, and assistants.

46. *DISEASES OF POULTRY*. Third year, spring term. Credit three hours. M W 10, M 2-4:30. Prerequisites, course 43a. Professors LEVINE and PECKHAM.

48. *FOOD QUALITY CONTROL*. Third year. Fall term. Credit six hours.

Veterinary inspection to control quality and wholesomeness of meat, meat food, dairy, fish, and poultry products and to study plants in which these products are produced, processed, manufactured, stored, etc. Food poisoning. Certain parts of the course are given by members of the Departments of Poultry Husbandry, Dairy Industry, and Animal Husbandry of the College of Agriculture, and the Department of Medicine of the Veterinary College. M W F 11-12, M W F 2-4:30. Laboratory fee, \$8.00. Colonel JENNINGS and collaborators.

62. *ANIMAL PARASITOLOGY*. Second year, spring term. Credit three hours. T Th 10, F 8. Prerequisites, Pathology 40, 40a, and Zoology or Biology.

This is an introductory course which endeavors to provide the student with a knowledge of fundamental facts and principles about animal parasitisms. Emphasis is given to the biological aspects of the subject, such as the interrelations of host and parasite, the life cycle of the parasite, the epidemiological factors, and underlying principles of treatment and prevention rather than to nomenclature and morphology. The general principles of treatment are thoroughly discussed. A comprehensive study of the parasitic diseases of the horse, cow, sheep, goat, pig, dog, cat, and certain wild animals of economic importance is arranged on the basis of the parasitism of the host rather than by the more conventional system of zoological affinities. The parasitisms of animals transmissible to man are discussed briefly. Professor D. W. BAKER and guest speakers.

62a. *PARASITOLOGY LABORATORY*. Second year, spring term. Credit one hour. Open only to veterinary students. Section I, F 2-4:30; Section II, Th 2-4:30. Laboratory fee, \$3. A companion course to 62 with the same prerequisites.

A laboratory study of the helminth and arthropod parasites of domestic animals with particular emphasis on the identification and bionomics of the forms of veterinary importance. Professor WHITLOCK.

63. *APPLIED PARASITOLOGY*. Third year, spring term. Credit one hour. Laboratory fee, \$3. Open only to veterinary students. Prerequisites, Courses 62 and 62a.

An organized study of the parasitic diseases of domestic animals with particular emphasis on the features of diagnostic importance. Special attention will be given to the laboratory and post-mortem techniques that are of value in applied parasitology. Professor WHITLOCK.

*Note: The following courses are not a part of the regular veterinary curriculum. Courses 61 and 170 are given especially for students in the College of Agriculture. Course 149 is given for those students who have had no work in pathological anatomy. The others are for graduate and advanced undergraduate students. Permission to register must be obtained by all students electing these courses.*

61. *HEALTH AND DISEASES OF ANIMALS*. Spring term. Credit three hours. Lecturers M W F 11. Not open to first year students or to those who have had no course in animal husbandry. The causes and the nature of the common diseases of livestock are discussed. Emphasis is placed on the prevention and control of animal diseases. Professor GILMAN and collaborators.

64. *ADVANCED WORK IN ANIMAL PARASITOLOGY*. Fall and spring terms. Credit one to three hours, by arrangement. Prerequisites, Courses 62 and 62a. For advanced undergraduate and graduate students.

Special problems concerned with the parasites of domestic animals. Professors BAKER and WHITLOCK.

149. *PATHOGENIC BACTERIOLOGY*. Spring term. Credit four hours. T Th 1-4:30. Laboratory fee, \$10.00. Assistant Professor GILLESPIE.

150. *LABORATORY METHODS OF DIAGNOSIS*. Credit one to three hours. Prerequisites, Courses 41a and 43a or 149. Hours by appointment. Dr. POPPENSIEK.

Instructions and practice in the application of bacteriological, pathological, and serological methods for the diagnosis of disease.

152. *ADVANCED WORK IN PATHOLOGY, BACTERIOLOGY, VIROLOGY, OR IMMUNOLOGY*. Fall and spring terms. Credit one to three hours. Hours to be arranged. Laboratory fee, \$2 a credit hour. Professors OLAFSON, LEVINE, J. A. BAKER, and BRUNER.

Properly prepared students may undertake special problems or receive special assignments.

153. *HEMATOLOGY*. Spring term. Credit one hour. Th 1:40-4. Laboratory fee, \$2. Assistant Professor BENTINCK-SMITH.

154. *SEMINAR*. Fall and spring terms. T 4:15. No credit. Required of all graduate students. Undergraduate students are admitted.

170. *POULTRY HYGIENE AND DISEASE*. Fall term. Credit two hours. Prerequisites, Animal Physiology 10 or Human Physiology 303, and General Bacteriology 3. Lecture and laboratory, Th 1:40-4. Assistant Professor PECKHAM.

#### THERAPEUTICS AND SMALL ANIMAL DISEASES

*Professors E. P. LEONARD, H. C. STEPHENSON; Internes J. W. RICH, C. A. HOOPER.*

The instruction in this department consists of lectures, recitations, and laboratory work. The instruction in therapeutics is not limited to the application of medicine to the treatment of diseased conditions but includes their actions upon the body,

including toxicology, official preparations, and prescription writing. The small animal clinic furnishes abundant material for inspection in applied therapeutics of these animals, including the surgical as well as the medical. This clinic is run as any small animal practice. The students are assigned to the cases, assist in any operations, and under close supervision have charge of the patients.

20. *THERAPEUTICS AND PHARMACY*. Second year, spring term. Credit six hours. Lectures, M T W Th F 9; laboratory, W 10-1 or F 10-1. Laboratory fee, \$7. Prerequisites, Physiology 13 and 14. Professor STEPHENSON.

21. *DISEASES OF SMALL ANIMALS*. Third year, fall term. Credit three hours. M W F 9. Prerequisite, Special Pathology. Professor STEPHENSON.

22. *DISEASES OF SMALL ANIMALS*. Fourth year, fall term. Credit three hours. M W F 8. Prerequisite, Special Pathology. Professor LEONARD.

23. *SURGICAL EXERCISES*. Third year, spring term. Credit one hour. T W Th or F 2-4:30. Laboratory fee, \$20. Professor LEONARD.

24. *ADVANCED WORK*. Five or more hours a week throughout the term. Research in the application of drugs in the treatment of disease. Professors LEONARD and STEPHENSON.

### MEDICINE AND OBSTETRICS

Professors M. G. FINCHER, J. M. MURPHY, S. J. ROBERTS; *Field Veterinarian* S. D. JOHNSON; *Associate Professor* F. H. FOX; *Medical Internes* S. R. ROCKWELL, MILTON ADSIT.

The course in veterinary medicine, principles and practice, extends over the last two years of undergraduate study, the subjects of the second year being distinct from, and complementary to, those of the first. It includes the constitutional, dietetic, and toxic affections and the noninfectious maladies of the different systems of organs—digestive, respiratory, circulatory, urinary, cutaneous, and visual—of the various genera of domestic animals. It also includes a study of the clinical phases of infectious diseases and the disturbances of metabolism.

Our proximity to the city and to a well-stocked agricultural country tends to secure a greater variety of patients than can be had in a large city remote from country flocks and herds. Students take charge of individual cases in the hospital and ambulatory clinic and keep a complete record of each. The course also includes instruction in diagnosis. Through the medium of laboratory work students are expected to acquire a methodical system of examination by repeated systematic observations on both normal and diseased animals. The work involves the use of various special diagnostic methods taught in our own and other laboratories of the College, such as examination of the blood, milk, urine, and feces, the application of sero-diagnostic methods, etc.

#### *Ambulatory Clinic*

An ambulatory or out-clinic is conducted for the purpose of giving instruction to students under conditions identical with those encountered in private practice. Proper conveyances and equipment are provided, and an opportunity is afforded for observing such diseased farm and dairy animals as cannot be entered in the clinics of the College. The student thereby not only has an opportunity to see cases not readily brought to the College clinic but also assists in handling cases in the same manner and under the same environment as are required of the country practitioner. As the vicinity of Ithaca is largely devoted to dairying, valuable clinical material relating to obstetrics and the diseases of dairy cows is available and is extensively used.

50. *DISEASES OF LARGE ANIMALS*. Third year, fall and spring terms. Credit: fall term, five hours; spring term, three hours. Lectures or recitations covering physi-

cal diagnosis, ophthalmology, veterinary hygiene, and some sporadic diseases. Fall term, M T W Th F 8; spring term, T Th 8, S 9. Associate Professor Fox.

51. *OBSTETRICS AND DISEASES OF THE GENITAL ORGANS, INCLUDING STERILITY AND ABORTION.* Third year, spring term. Credit five hours. Lectures, M W F S 8; Laboratory, T or Th 2-4:30. It is aimed in this course to give a general survey of the subject of obstetrics and to include a thorough consideration of the diseases of the genital organs including sterility, abortion, and other subjects related to pregnancy and parturition. Obstetrical exercises, pregnancy diagnosis, artificial insemination, and other clinical phases of the course are presented during the laboratory periods. Further clinical instruction in obstetrics and sterility is given in the ambulatory clinic and at a near-by abattoir in the third and fourth years. Professor ROBERTS.

52. *DISEASES OF LARGE ANIMALS.* Fourth year, fall and spring terms. Credit: fall term, two hours; spring term, four hours. Fall term, T Th 8; spring term, M T W Th 8. Professor FINCHER.

**SPECIAL LECTURES.** During the year, lectures on special topics in medicine will be given by eminent practitioners and teachers of veterinary medicine. These will form a part of the instruction in this department.

**OPPORTUNITIES FOR RESEARCH.** The activities of the department, aside from the instruction work, are devoted to research in connection with diseases of cattle, including mastitis, the phenomena of sterility and abortion in animals of breeding age, and diseases of newborn calves. Opportunity is afforded for participation in the investigations by graduate students having acceptable preparation.

## SURGERY

*Professors* A. G. DANKS, A. M. MILLS; *Internes* P. C. KENNEDY, A. C. LEWIS.

The instruction consists of classroom and laboratory work designed to afford training for practice.

### *Classroom Work*

Course 30 in General Surgery, Course 40 in General Pathology, and Course 31 in Surgical Exercises together constitute a group designed to impart a general knowledge of the principles of surgery, surgical pathology, therapeutics, and operative technique.

Course 32, a total of seventy-five lectures and recitations, is devoted to the surgery of the various regions of the body and includes horseshoeing.

The College possesses an extensive collection of surgical instruments and apparatus of home and foreign make, illustrating the history of veterinary surgery as indicated by the means employed in the cure of diseases. The College has acquired since its foundation an extensive pathological collection illustrative of surgical diseases, to which has been added from the surgical and obstetrical clinics a large amount of material of value for teaching purposes. Further important additions are made by veterinary practitioners. The surgical collection is especially rich in specimens illustrating the diseases of the teeth.

### *Clinics and Laboratory Work*

The laboratory work in the Department of Surgery includes Surgical Exercises and Clinics. In the course in Surgical Exercises the student is required to perform all the important operations on horses and cattle. The animal for a given exercise is placed under general anesthesia, which is maintained until the close of the period, when the subject is destroyed. The maintenance of chloroform anesthesia for three consecutive hours gives the student valuable experience in the technique of general

anesthesia, for which there is a constantly increasing demand. Strict method is enforced in relation to asepsis and antisepsis, arrest of hemorrhage, suturing, and dressing, so that, while acquiring skill and knowledge of the appearance, resistance, and general character of living tissue, the student also forms proper habits in surgical procedure.

### *Clinical Surgery of the Larger Animals*

Students in charge of cases are required to give necessary daily attention.

There is an operating room fitted with operating table, stocks, and other conveniences. There is also a shoeing forge with a blacksmith in attendance. Fourth year students assist regularly in the surgical operations.

General and local anesthetics are regularly used in painful operations, and the student is taught to eliminate, as far as practicable, the element of pain in surgery. Instruments and apparatus of the most approved pattern are kept directly at hand in the operating room, and the student becomes familiar with their good and bad points by actual use.

Special apparatus for investigation is supplied as needed. Advanced students are called upon to assist in the various investigations, and thus become not only more familiar with surgical manipulations but also inspired to study methodically and effectively the many questions in surgical pathology and therapeutics. They also become better prepared to cope promptly and properly with the many atypical cases constantly occurring in general practice.

30. *GENERAL SURGERY*. Third year, first term. Credit four hours. T Th S 9; Th or S 10-12:30. Prerequisites, Anatomy 1 and 2, Zoology 305 and 306, and Physiology 12. Professor MILLS.

31. *SURGICAL EXERCISES*. Three hours a week of laboratory work in surgical operations upon anesthetized animals. Third year, fall term. Credit one hour. T or Th 2-4:30. Laboratory fee, \$30. Professor MILLS.

32. *SPECIAL SURGERY*. Third year, spring term. Credit five hours. M T W Th F 9. Professor MILLS.

33. *JURISPRUDENCE, ETHICS, AND BUSINESS METHODS*. Fourth year, spring term. Credit one hour. F 8. Lectures by a lawyer on the subjects of the expert witness, jurisprudence, and civil law; lectures by one trained in business administration on the subjects of accounting, business methods, etc.; and lectures on various practical subjects such as registration, selecting a place to practice, advertising, ethics, etc.

### THE CLINICAL COURSES

*Professors* FINCHER, OLAFSON, LEONARD, DANKS, STEPHENSON, MILLS, LEVINE, ROBERTS; *Associate Professors* RICKARD and FOX; *Assistant Professor* PECKHAM; *Assistants* SAUNDERS and MACHADO; *Internes* RICH, HOOVER, LEWIS, ADSIT, ROCKWELL.

The practical application of the student's basic knowledge of veterinary medicine to the clinical diagnosis and therapy of disease begins in the third year of his course. During that year he is required to take Clinical Orientation, which introduces him to clinical work largely as an observer. His intensive training in clinical medicine and surgery begins in his fourth year, the greater part of which is devoted to actual handling of patients under close supervision of members of the clinical staff.

The clinical instruction is divided among four departments as follows:

The Ambulatory Clinic is operated by the Department of Medicine and Obstetrics.

The Consulting Clinic is operated by the Department of Surgery.

The Small Animal Clinic is operated by the Department of Therapeutics and Small Animal Diseases.



The Poultry Clinic and the work in autopsies and clinical pathology are conducted by the Department of Pathology and Bacteriology.

Information about the respective clinical divisions will be found under the course announcements of the departments concerned. Only students who have completed the first two years of the veterinary curriculum will be admitted to any one of the clinical courses.

Semester credits in clinical courses are not given, but students must complete all prescribed courses satisfactorily to be eligible for graduation.

201. *CLINICAL ORIENTATION*. Throughout the third year. Fall term, T 10-12; spring term, daily 11-1. Dr. LEONARD in charge.

In the fall term methods of clinical examination will be demonstrated, and selected cases from all the clinics will be presented and discussed. During the spring term the students will be assigned in groups to the daily clinics, acting as assistants and observers.

202. *CLINICAL CONFERENCES*. Throughout the fourth year. T 4-5. Dr. RICKARD in charge.

These conferences will be attended by all members of the fourth year class and by staff members representing not only the clinical but the preclinical or basic sciences as well. Students will be required to present reports on their studies of selected cases from the clinics, and these will be criticized and discussed by the Faculty members. In this way special knowledge and viewpoints of the anatomist, biochemist, physiologist, pathologist, bacteriologist, and parasitologist, as well as those of the clinicians, will be brought to bear on problems of diagnosis and therapy.

203. *CLINICS*. Throughout the fourth year. Daily, including nights and Sundays when necessary. Laboratory fee, \$10 a term. Dr. LEONARD in charge.

During his fourth and final year the veterinary student is required to spend his time, after 9 o'clock daily, studying and ministering to the ailments of patients. He is on call, night and day, during the entire year. For this reason he is not permitted to carry extra academic courses, and outside part-time employment is not accepted as a valid excuse for failure to meet his full responsibilities in these courses.

Under a plan of rotation, students are required to work in groups in the several clinics so that they may acquire a varied experience. Work in one of the clinical divisions may not be substituted for that in any of the others.

Work in clinical pathology and autopsies will be supervised by the Department of Pathology and Bacteriology. Such work is not regarded as separate courses but as fundamental parts of the clinical training. As a part of their clinical duties, students will be required to carry out, under the supervision of the clinical pathologist, such laboratory procedures as are indicated. If the patient dies, the same students who attended him during life will be required to conduct the autopsy and to make any pathological, bacteriological, or biochemical tests that are necessary to provide complete information on the nature of the disease, the reasons for failure of the therapeutic procedures used, and the cause of death.

At the end of each term, the performance of each student in all the clinical divisions will be considered by all men giving the course, in a special meeting called for this purpose. Failure to do satisfactory work in any of the divisions will mean failure in the entire course.

## COURSES IN THE VETERINARY CURRICULUM GIVEN BY OTHER COLLEGES OF THE UNIVERSITY

### COLLEGE OF ARTS AND SCIENCES

305-306. *ZOOLOGY*. Histology and Embryology. Fall and spring terms. Credit eight hours. Required of first-year students. The exercises each week are as follows:

Fall term: lectures, T F 12; laboratory, W F 2-4:30. Spring term: lectures, W F 9; laboratory, W F 10-1. Professor ADELMANN and Associate Professor WIMSATT.

This course aims to provide the student with a practical knowledge of the normal structure and development of the tissues and organs of the animal body by the direct study of them in the laboratory. From time to time the ability of the student to recognize the normal structure is tested by the identification of unlabeled preparations. The laboratory work is supplemented by recitations, reviews, and lectures covering the general aspects of the subject.

### COLLEGE OF AGRICULTURE

1. *ANIMAL HUSBANDRY*. Introductory livestock production. First year, fall term. Credit three hours. Lectures, W F 8. Laboratory, W 11-1. *Judging Pavilion*. Fee, \$2. Professors MILLER and WILLMAN and Assistant Professor WANDERSTOCK.

Introduction to types, breeds, judging, care, feeding, and management of sheep, swine, beef cattle, and horses.

3. *BOTANY*. Poisonous plants. First year, spring term. Credit one hour. Lectures and demonstrations. Emphasis will be given to the recognition of the principal kinds of stock-poisoning plants. *Plant Science* 353. Laboratory fee, \$1. Professor W. C. MUENSCHER.

10v. *ANIMAL HUSBANDRY*. The principles and practice of livestock feeding. Second year, spring term. Credit four hours. M W Th S 8. *Moore Laboratory*, Room 101. Professor REID.

In this course consideration is given to the basic principles of livestock nutrition, nutritive requirements for various body functions, composition and nutritive value of feeds, and the computation of practical livestock rations.

124. *POULTRY HUSBANDRY*. Animal genetics. First year, spring term. Lectures, T Th 9. *Moore* 101. Laboratory and discussion, W 2-4:30. *Rice* 201 and 305. Credit three hours. Laboratory fee, \$2. Professor HUTT.

Principles of genetics; sex determination and sex linkage; inherited characters in domestic animals, with special reference to lethal genes and genetic resistance to disease; progeny testing; inbreeding and crossbreeding.

50v. *ANIMAL HUSBANDRY*. Dairy cattle. First year, spring term. Lectures T Th S 10, *Wing A*; Laboratory M or Th 2-4:20, *Judging Pavilion*. Credit one hour. Laboratory fee, \$.75. Professor TURK and assistants. This course will extend through the first five weeks only.

Some of the economic aspects of the dairy industry; study of dairy breeds; and factors in breeding and development of dairy cattle. Practice in selection of dairy cattle.

### DEPARTMENT OF CLINICAL AND PREVENTIVE MEDICINE

27. *FUNDAMENTALS OF ROENTGENOLOGY*. Third year, spring term. Credit one hour. F 10. A brief survey of X-ray physics, technique of operation of modern equipment, X-ray protection, darkroom procedure, and fundamentals of diagnosis. Professor SHOWACRE.

### DEPARTMENT OF MILITARY SCIENCE AND TACTICS VETERINARY RESERVE OFFICERS TRAINING UNIT

The Department of the Army maintains a Veterinary Unit to offer instruction in Veterinary Military Science. This instruction is designed to furnish veterinary students with information concerning the Army and Air Force as a whole and the Medical Department and Veterinary Service in particular. The purpose of this training is to produce veterinary officers who are thoroughly versed in the fundamental

knowledge of the subjects necessary for the Veterinary Corps Reserve of the Army and Air Force.

The course of instruction in this unit is divided into two parts—Basic and Advanced. Students accepted for formal enrollment in the Advanced course must pass satisfactorily the prescribed physical examination and must not have reached 31 years of age at the time of initial enrollment in that course. Veterinary students who have completed appropriate Basic training (2 years' ROTC or equivalent) will not be required to pursue the complete course of instruction included in Veterinary Military Science but will be required to pursue only those courses for which credit cannot be claimed. Veterinary students who have satisfactorily completed Basic Veterinary Military Science will be eligible for enrollment in the Advanced veterinary courses.

Students enrolled in the Advanced courses will be exempted from the draft and will receive a daily monetary allowance of 90 cents for the period beginning with their formal enrollment in that course and ending at graduation—595 days. Each student will also receive a daily allowance of \$2.50 for the required attendance at a six weeks' summer camp at Brooke Army Medical Center, Fort Sam Houston, Texas. Expenses incident to attendance thereat, including travel, board, and lodging, will be defrayed by the Department of the Army.

Upon satisfactory completion of the Advanced courses at graduation, each student will be offered a commission in the Veterinary Corps Reserve of the Army or Air Force. Officer in charge, WILLIAM E. JENNINGS, D.V.M., Lt. Colonel, Veterinary Corps, U.S. Army; Master Sergeant HERBERT J. LONG, Veterinary Service, U.S. Army, Assistant.

MS-61. First term. Basic Veterinary ROTC. First year, fall term. No credit. No prerequisite.

MS-62. Second term. Basic Veterinary ROTC. First year, spring term. No credit. Prerequisite, MS-61.

MS-63. Third term. Basic Veterinary ROTC. Second year, fall term. No credit. Prerequisite, MS-62.

MS-64. Fourth term. Basic Veterinary ROTC. Second year, spring term. No credit. Prerequisite, MS-63.

MS-65. First term. Advanced ROTC—Veterinary Corps. Third year, fall term. No credit. Prerequisite, MS-64.

MS-66. Second term. Advanced ROTC—Veterinary Corps. Third year, spring term. No credit. Prerequisite, MS-65.

MS-67. Third term. Advanced ROTC—Veterinary Corps. Fourth year, fall term. No credit. Prerequisite, MS-66.

MS-68. Fourth term. Advanced ROTC—Veterinary Corps. Fourth year, spring term. No credit. Prerequisite, MS-67.

Additional information on these courses in Veterinary Military Science is given in the *Announcement of the Independent Departments*.



# Appendix A

## OPENINGS FOR VETERINARIANS IN AMERICA

The field of veterinary medicine offers excellent opportunities for those who have a liking for medicine and are interested in animals. The work often is rigorous. The compensation varies greatly. One can seldom become wealthy as a veterinarian, but intelligent and conscientious service usually is rewarded by an adequate income. Those who are genuinely interested in the work have the satisfaction of serving a useful purpose; those who are looking for great financial return are advised to look elsewhere.

Some of the opportunities for veterinary graduates are given below:

### I. PRIVATE PRACTICE

Veterinary practice is a wide field with excellent opportunities for well qualified persons. Practice may be (a) general, in which the individual offers his services in dealing with all species of animals; (b) small animals, in which only household pets are treated; or (c) special, in which only certain specific conditions are handled. About two-thirds of the graduates of veterinary colleges sooner or later become private practitioners.

### II. SALARIED POSITIONS

About one-third of veterinary graduates obtain positions on a salary basis. The majority of these are with the federal, state, county, and municipal governments, the remainder with private corporations.

#### (a) Private Corporations

Many veterinarians are employed by the large milk companies, by large stock farms, by serum and virus manufacturers, and by drug manufacturers.

#### (b) Governmental Agencies Which Employ Graduate Veterinarians

##### 1. *Bureau of Animal Industry, U.S. Department of Agriculture*

This Bureau employs more veterinarians than any other single agency. The greatest number are engaged in meat inspection, but many act as livestock agents and inspectors, inspectors in quarantine stations, and inspectors in biologic production plants; others are engaged in research and investigation in laboratories and in the field.

##### 2. *Veterinary Corps, U.S. Army and U.S. Air Force*

Veterinary students who complete the Veterinary ROTC course and meet the standards prescribed by the Surgeon General of the U.S. Army

and the Surgeon General of the U.S. Air Force are eligible upon graduation for a commission in the Veterinary Corps Reserve of the U.S. Army or U.S. Air Force, respectively. Civilian veterinarians who are males, physically qualified, and graduates of a veterinary college acceptable to the Surgeons General of the U.S. Army and U.S. Air Force are also eligible for appointment in the grades of second lieutenant to colonel inclusive, the grade being determined by the age, veterinary professional experience, and professional qualifications of the applicant. Members of the Veterinary Corps Reserve of either the U.S. Army or U.S. Air Force are eligible for and may apply for active duty at any time but cannot be called to active duty without their consent except when the general call of Reserve officers is authorized during a period of national emergency. Those entering the Veterinary Corps Reserve from either source are given two years' service credit for promotion purposes upon being commissioned, and, therefore, those initially appointed as second lieutenants at time of graduation are eligible for promotion to the grade of first lieutenant after one year's service. Under the provisions of Public Law 810, members of the Veterinary Corps Reserve who complete satisfactorily twenty years of service, both active and inactive service being considered, are eligible for retirement and will receive retirement benefits upon reaching 60 years of age.

Vacancies in the Veterinary Corps of both the Regular Army and the Regular Air Force are filled by the appointment of selected individuals who have applied for at least two years of extended active duty under their Reserve commissions and who, during such tour of duty, have successfully completed a one-year period known as a qualification tour for Regular Army appointment and regular Air Force appointment. Applicants for a qualification tour must be under 32 years of age. Those selected for appointment in the Regular Army or Regular Air Force as a result of a qualification tour must be over 21 years of age, citizens of the United States, of good moral character, and physically qualified, and must meet such other standards of performance as may be prescribed.

A career as an officer in the Veterinary Corps of the United States Army or the United States Air Force offers innumerable opportunities, advantages, and benefits, as well as a degree of security not found in most other fields.

### *3. State Governments*

Every state has a state veterinarian or similar officer, usually in the department of agriculture, whose duties are to look after the health of animals by enforcing laws and regulations drawn for this purpose. In many states the state veterinarian has a corps of assistant veterinarians.

Many state health departments have one or more veterinarians on

their staffs to advise on animal diseases that have significance in human health and to investigate outbreaks of such diseases.

Practically every agricultural school has a veterinary department, some of these employing five or six veterinarians as research workers and teachers. The veterinary colleges of the country have staffs of twenty to thirty veterinarians each. Teaching opportunities are numerous in every field of veterinary education. Young veterinarians who have been in the upper quartile of their classes should consider this branch of the profession seriously.

#### *4. Municipal Governments*

Most cities employ graduate veterinarians on a full-time basis, and many towns and villages on a part-time basis, as members of their health departments. The duties of these men usually are connected with the sanitary control of meat and milk.

## *Appendix B*

### LEGAL REQUIREMENTS FOR THE PRACTICE OF VETERINARY MEDICINE IN THE UNITED STATES

Before one can practice veterinary medicine in the United States he must obtain a license from the state or states in which he locates his practice. This license generally is issued by the department of education or the department of agriculture on the basis of an examination set by a veterinary licensing board. Some states issue licenses, without examination, by reciprocity when the applicant has been licensed in other states.

Information about the licensing laws of the various states can usually be obtained by directing a letter of inquiry to the department of agriculture or the state veterinarian in the state capital.

In New York the licensing agency is the State Education Department, Albany, New York. Examinations are given semiannually, in January and June, in Ithaca, New York. Applicants are required to furnish evidence of adequate preprofessional as well as professional education, of good moral character, and of being at least 21 years of age. Application for the examination must be filed at least 15 days before the scheduled date and must be accompanied by a fee of \$25. Before a licensee can legally undertake practice in New York his license must be duly registered by the county clerk in the county in which his place of business is located.

# Catalogue of Students

1950-51

## GRADUATE STUDENTS

- |   |  |
|---|--|
| Blaisdell, Katherine Frizzell, B.S.,<br>Charleston, N.H.            | Lee, Kyu Myong, M.D., Chongnogoo,<br>Seoul, Korea                    |
| Blampied, Nicholas, M.R.C.V.S.,<br>St. Hellier, Jersey, Channel Is. | Machado, Antonio V., D.V.M.,<br>Bello Horizonte, Brazil              |
| Blood, Douglas C., B.V.Sc., Ashfield,<br>N.S.W., Australia          | McEnerney, Philip J., B.A., D.V.M.,<br>Scarsdale, N.Y.               |
| Bryant, Marvin P., B.S., M.S., Boise,<br>Idaho                      | O'Toole, James Joseph, B.S., M.S.,<br>Woodbridge, N.J.               |
| Burnstein, Theodore, D.V.M., Denver,<br>Colorado                    | Poppensiek, George C., V.M.D., Ithaca,<br>N.Y.                       |
| Christensen, George C., D.V.M., M.S.,<br>Staten Island, N.Y.        | Robinson, James I., D.V.M., Guelph,<br>Ontario, Canada               |
| Greig, Andrew, D.V.M., Toronto,<br>Ontario, Canada                  | Romagnoli, Aldo, D.V.M., Pisa, Italy                                 |
| Hoerlein, Benjamin F., D.V.M.,<br>Auburn, Ala.                      | Saunders, Leon Z., V.S., D.V.M., M.S.,<br>Winnipeg, Manitoba, Canada |
| Kennedy, Peter C., D.V.M., Springfield,<br>Mass.                    | Tonzetich, Joseph, B.S.A., Vancouver,<br>British Columbia, Canada    |

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| Bo, Howard Allan, Spencerport                   | Kronman, Kenneth, Brooklyn                    |
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| Cello, Robert Morgan, Staten Island             | Malnati, Peter Louis, Ashley Falls, Mass.     |
| Christensen, George Manford, Williston,<br>N.D. | Mara, John Lawrence, Hamilton                 |
| Davidson, James Carl, Gouverneur                | Martin, James Francis, Jr., White Plains      |
| Decher, Robert Everett, Staten Island           | Meleney, William Phelps, New York<br>City     |
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| Georgi, Jay Robert, Woodside                    | Roy, William Edson, Horseheads                |
| Hendricks, Marion, Barbourville, Ky.            |   |

Schaffer, Myron Holt, New York City  
 Sickles, John Stephen, Pearl River  
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 Weeks, John Elmer, North Clymer  
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 Greenwood, Albert Roundy, Bellows  
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 L.I.  
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 Utah  
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 Tomidy, Kasimier Michael, Utica  
 Trowbridge, Robert Denny, Adams  
 Center  
 Vreeland, Everett Woodruff, White  
 Plains  
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 Winnick, Edward Peter, Candor

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 City  
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 Stack, William Francis, Syracuse  
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 Cooley, Gerald Raymond, Buffalo  
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 Dygert, Dewitt David, Springville  
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- Marshall, Vincent, Brooklyn  
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 Wilkes, Jack E., Batavia  
 Willson, John Ellis, Clarks Green, Pa.  
 Wiswall, Irwin William, Alden  
 Wyatt, David Earl, Lakewood, R.I.